Western Pacific Storm Track & Migratory lows

Lake Baikal Low

Manchurian low

Yellow Sea Low

South Mongolia Low

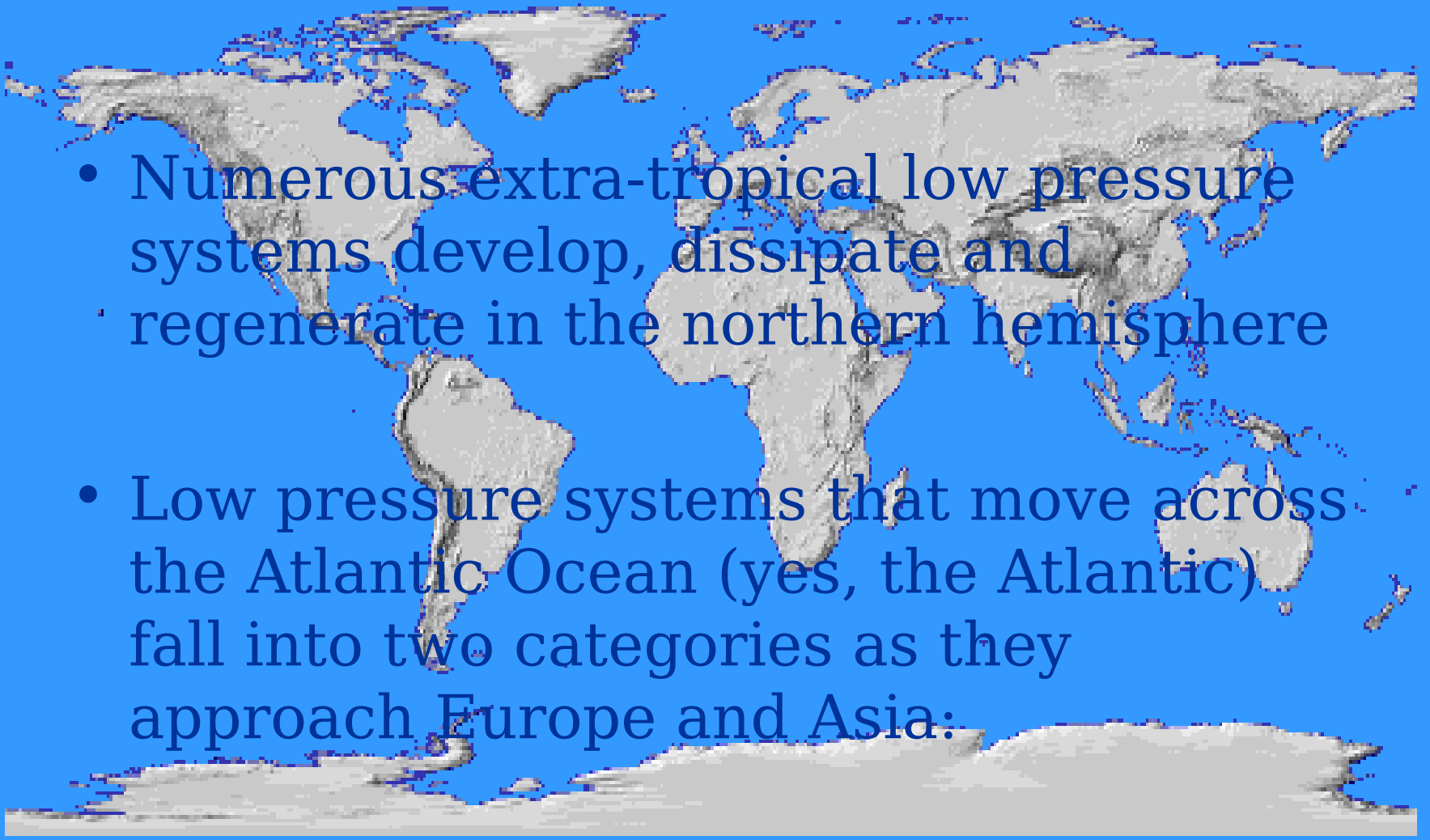Taiwan Low

Shanghai Low

References

- SEVENTH Fleet AOR Forecasters Handbook (02/98)

- National Geographic Atlas of the World, Sixth edition

- www.yoko.npmoc.navy.mil

Seasonal Storm Tracks

- Numerous extra-tropical low pressure systems develop, dissipate and regenerate in the northern hemisphere

- Low pressure systems that move across the Atlantic Ocean (yes, the Atlantic) fall into two categories as they approach Europe and Asia:
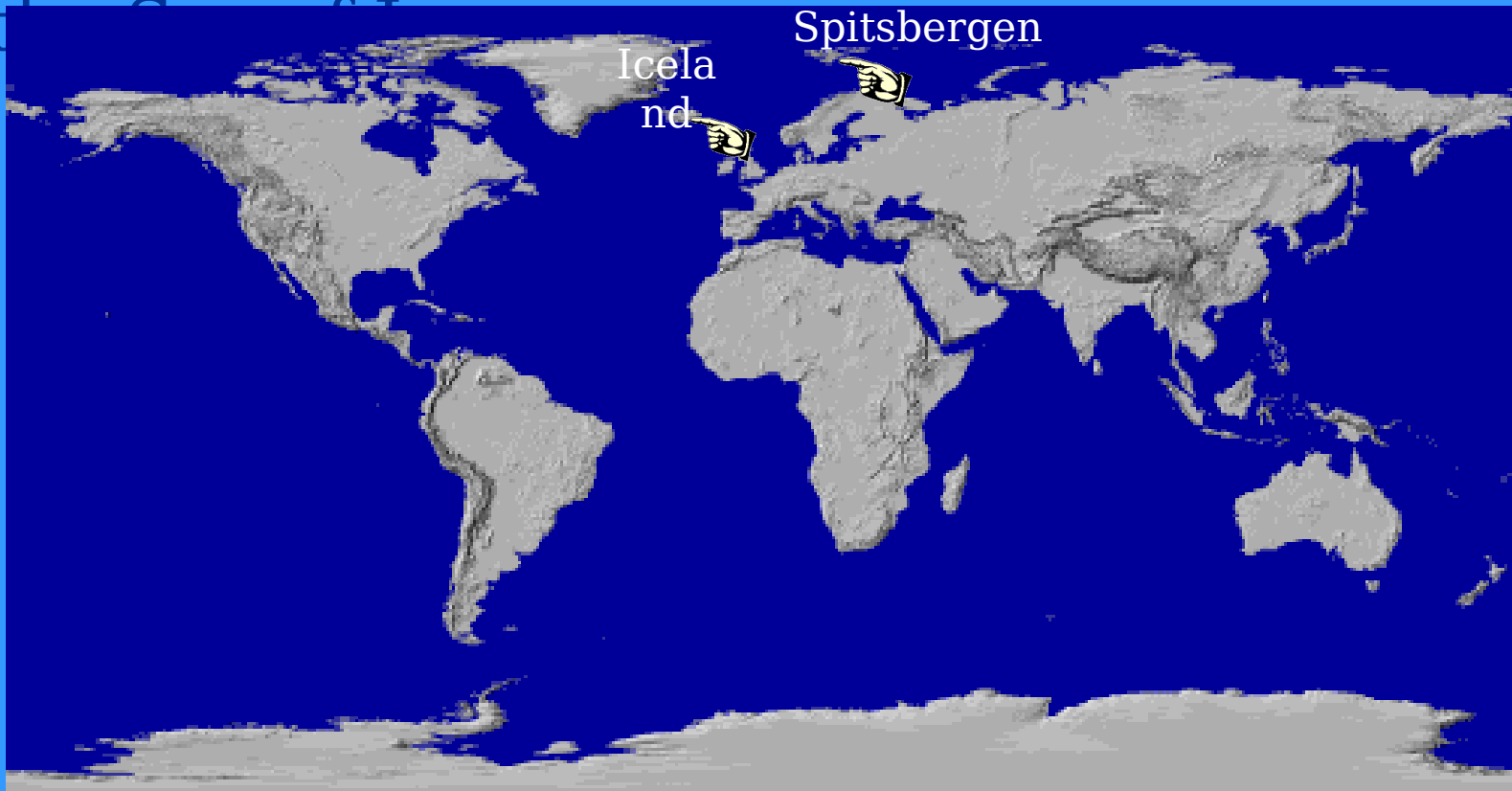
Seasonal Storm Tracks

- The <u>Icelandic storm track</u> defines those lows which move through Iceland and the Barents Sea, then drop southeastward over

Iceland   Barents Sea   Mongolia
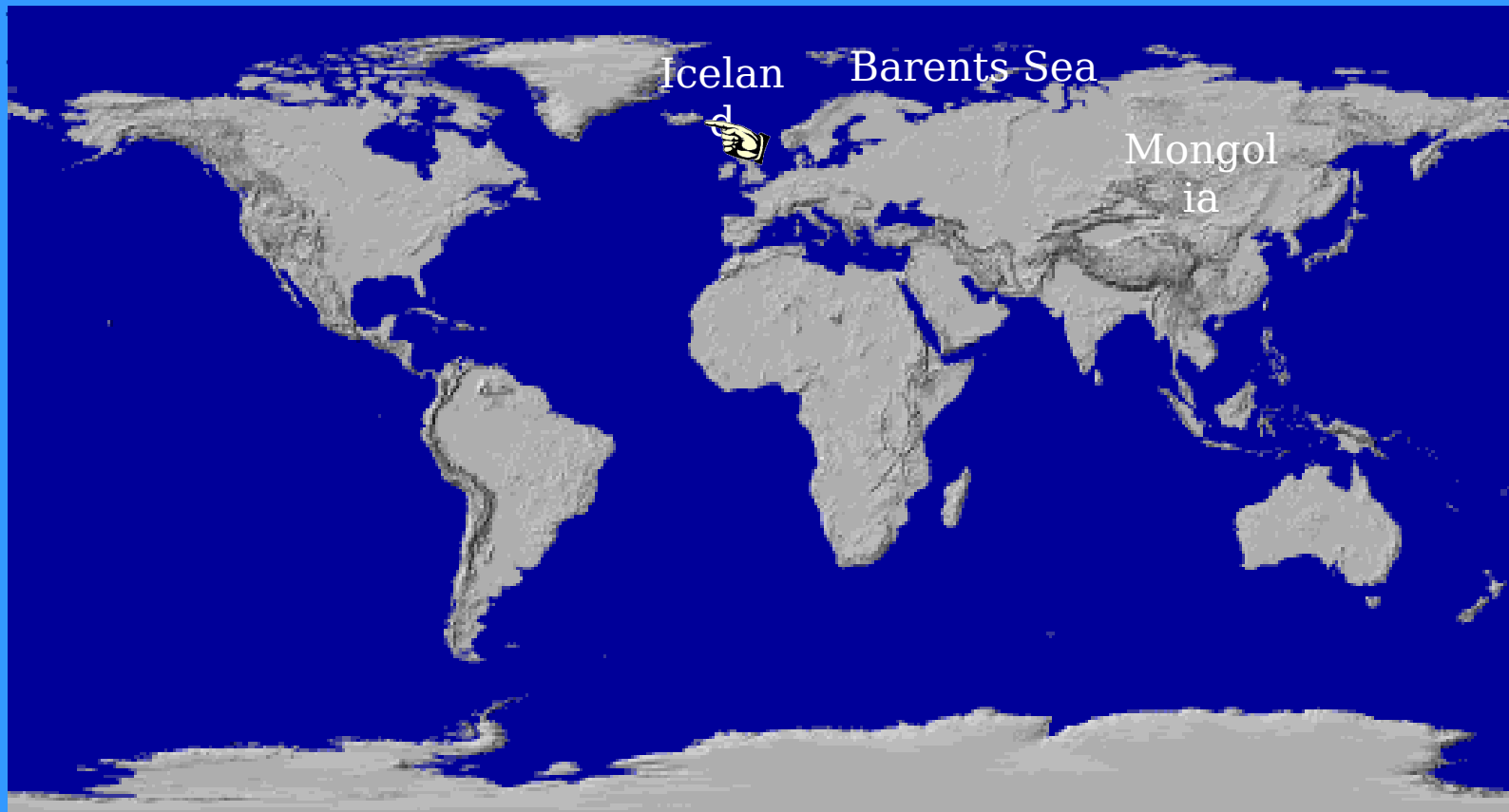
Seasonal Storm Tracks

- The <u>Siberian storm track</u> defines lows which move over Iceland and then northward over Spitsbergen, then move southeastward over the Sea of J
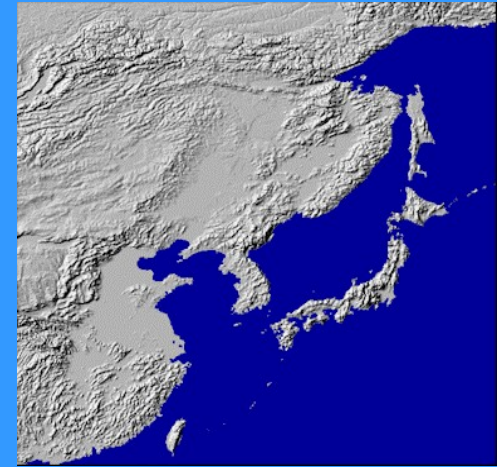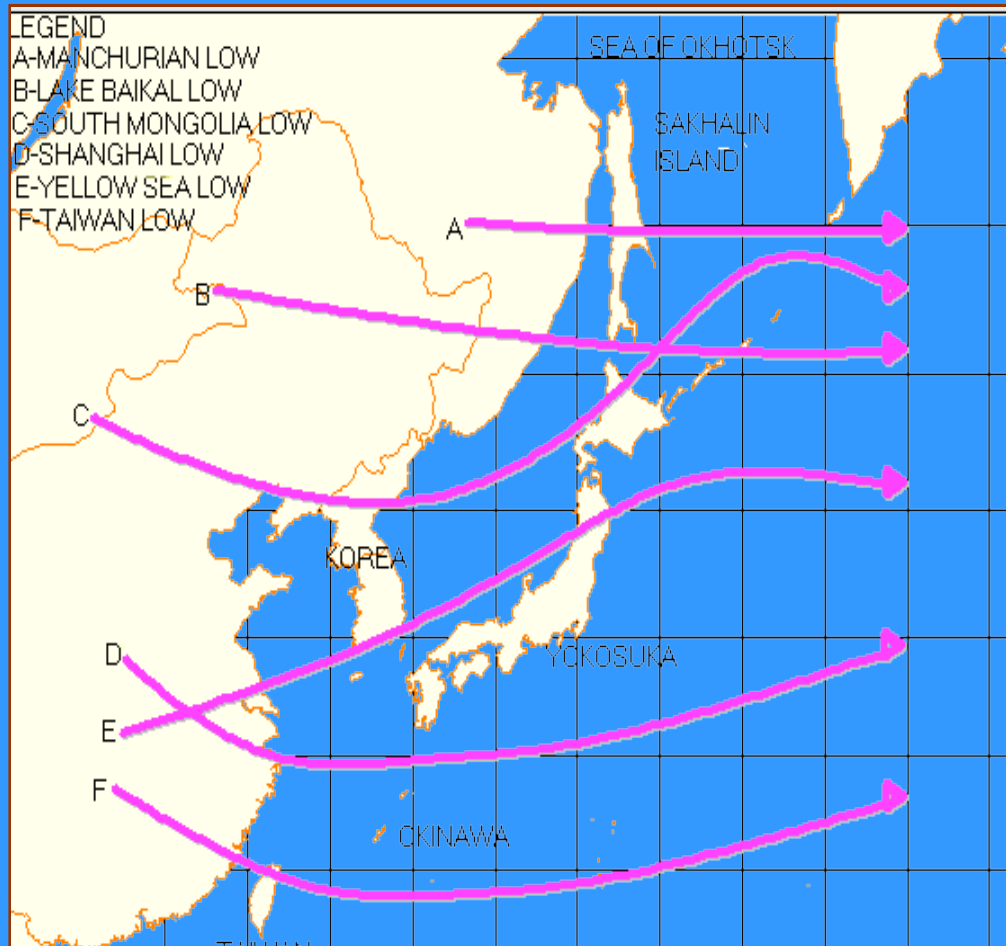
Spitsbergen

Iceland

Seasonal Storm Tracks

- The Yellow Sea, Shanghai and Taiwan storm tracks (southern storm tracks) can be defined as spin-off of the numerous atmospheric impulses which move across the Asian con

Yellow Sea Low
Taiwan Low
Shanghai Low

Migratory lows

LEGEND
A-MANCHURIAN LOW
B-LAKE BAIKAL LOW
C-SOUTH MONGOLIA LOW
D-SHANGHAI LOW
E-YELLOW SEA LOW
F-TAIWAN LOW

SEA OF OKHOTSK

SAKHALIN ISLAND

KOREA

YOKOSUKA

OKINAWA

- There are two distinct categories of low pressure systems that affect the West Pacific year round
- The two categories are northern lows and southern lows

Northern Lows

- Normally generate/regenerate in northern China/southern Russia

- Leave their source region and track eastward over north Sea of Japan/Sakhalin Island, then over the Pacific

- These lows all form by short wave region

- Lows are enhanced by downslope adiabatic warming as they transit mountain areas

Lake Baikal Low
Manchurian low
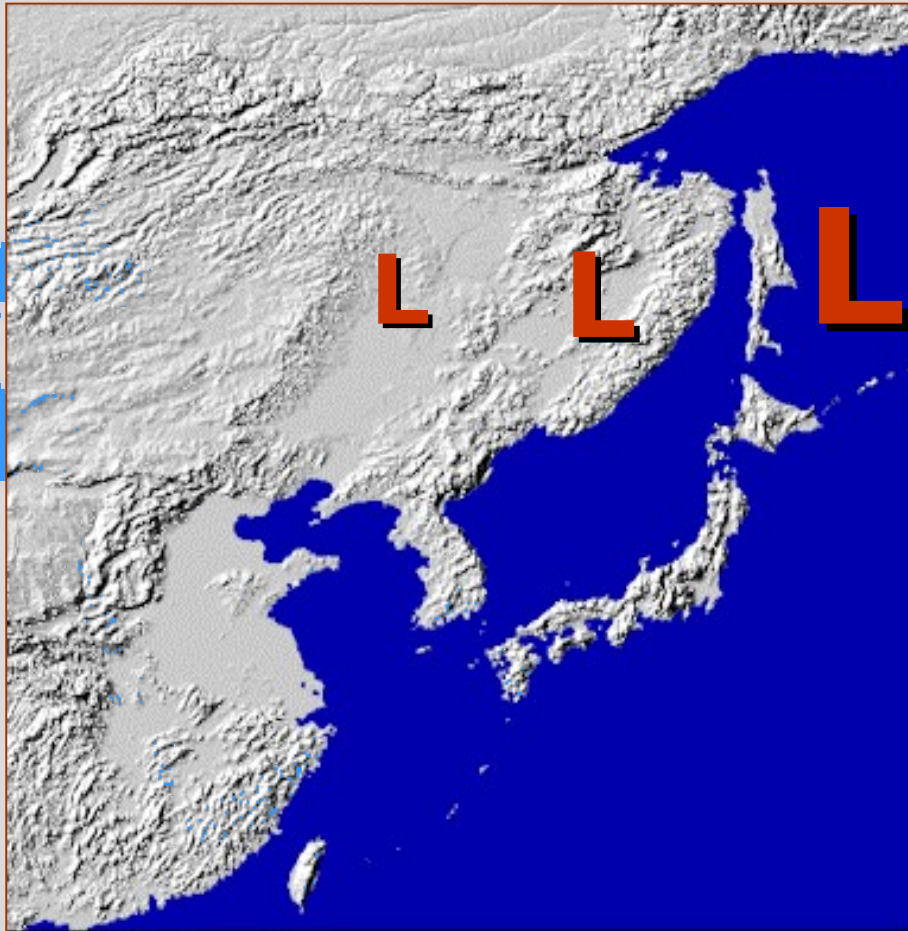*South Mongolia Low*

Lake Baikal Low

- Develop vicinity of Lake Baikal/central Siberia

- Can develop anytime, but most common in spring

- Moves at approx. 22 kts

- Track is through the Le Perouse Strait/North West Pacific

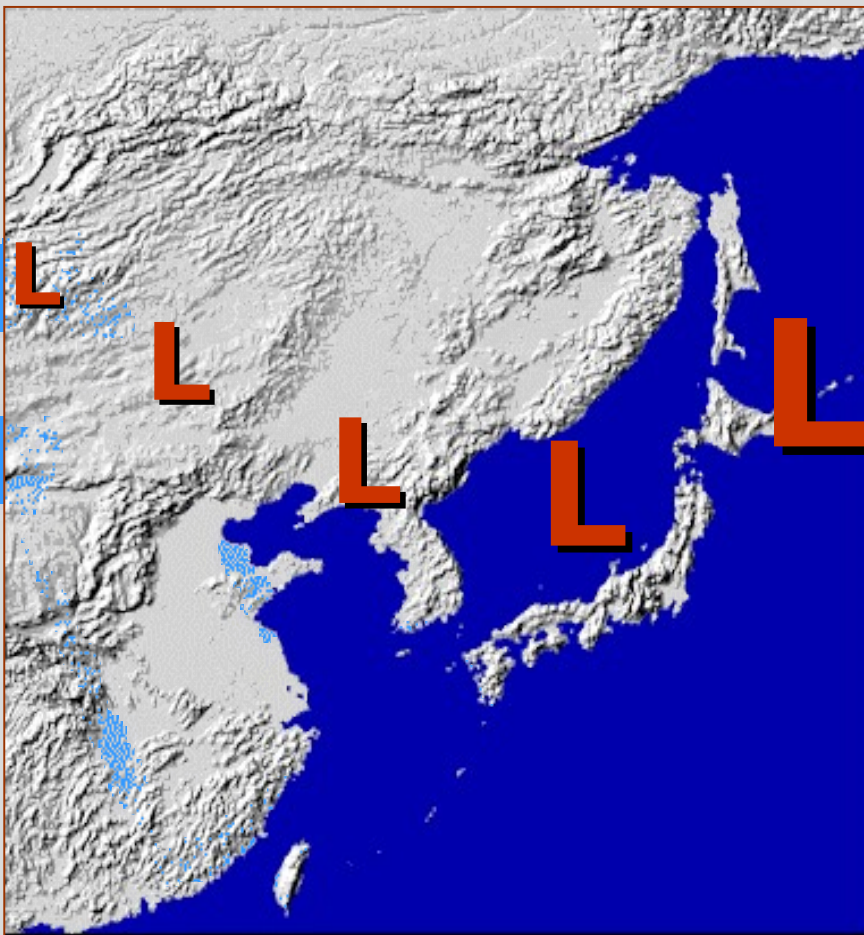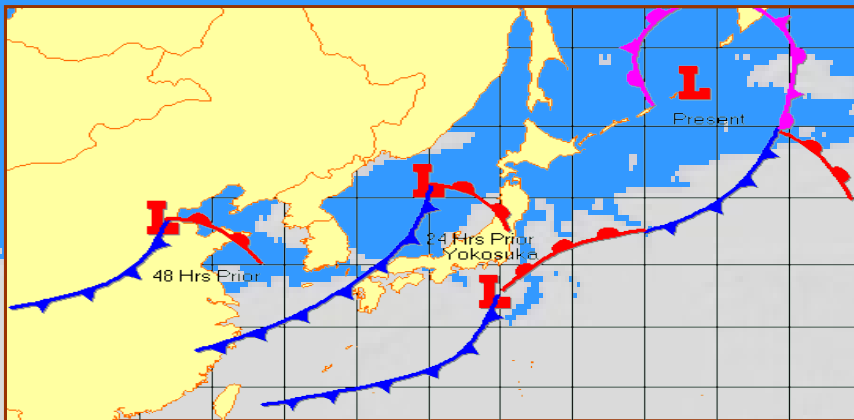- Very little weather associated until over open ocean
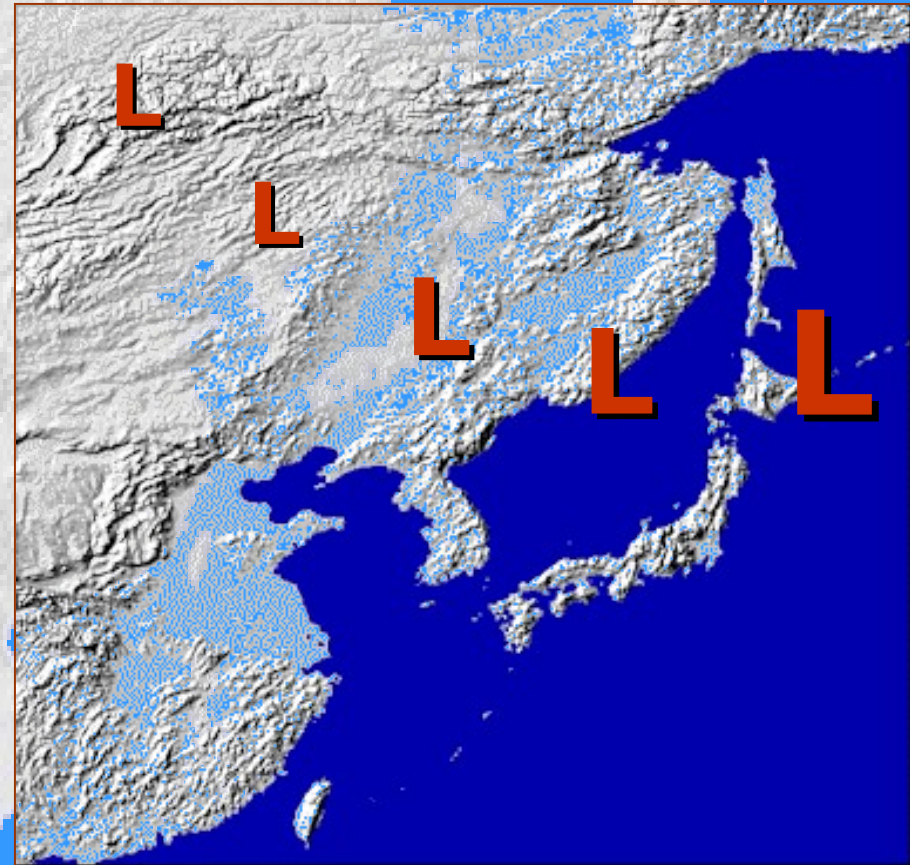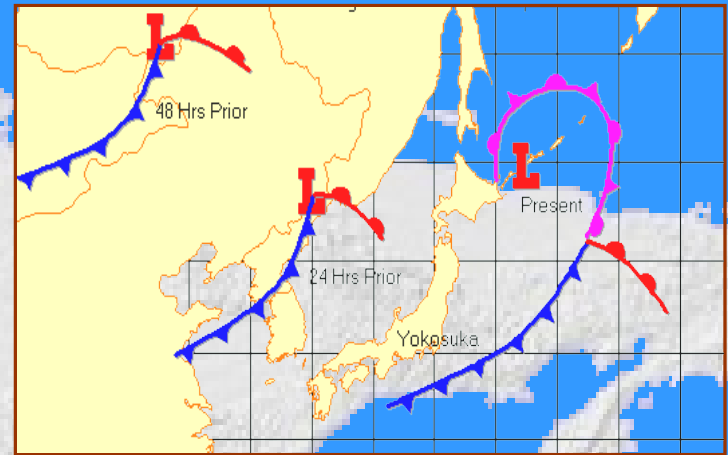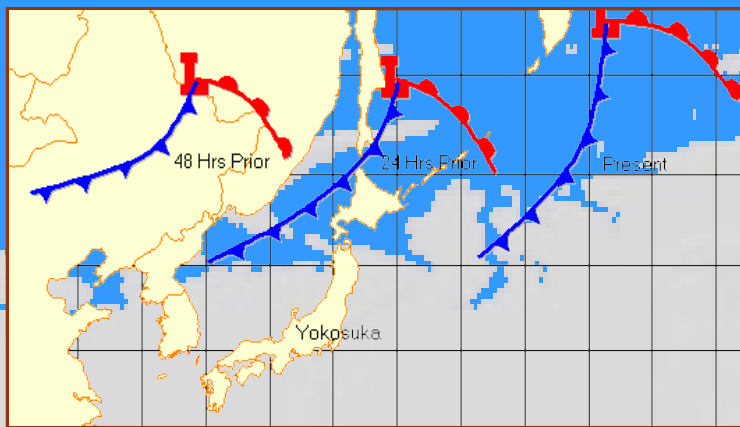
Manchurian low

- Develops over the border of Manchuria
- Tracks east over Sakhalin Island before exiting Sea of Okhotsk
- Occurs autumn/spring
- Average speed 20 kts
- Very little weather associated until over water

South Mongolia Low

- Induced by lee side trough over Altai Mountains

- Tracks southeast from source region, over North Korea, exits Sea of Japan, northeast to Hokkaido, then Western Pacific

- Develop anytime time of year/moves at 20 kts

Southern Lows

- Form central/southern China

- Track eastward to Sea of Japan or south of Japan between Kyushu and Okinawa

- Lows can form year round and produce extensive weather

- Source region is primarily n... Shanghai

- Generating area is heavily influenced by the passage of mid-level short wave troughs

Yellow Sea Low

Shanghai Low

Taiwan Low
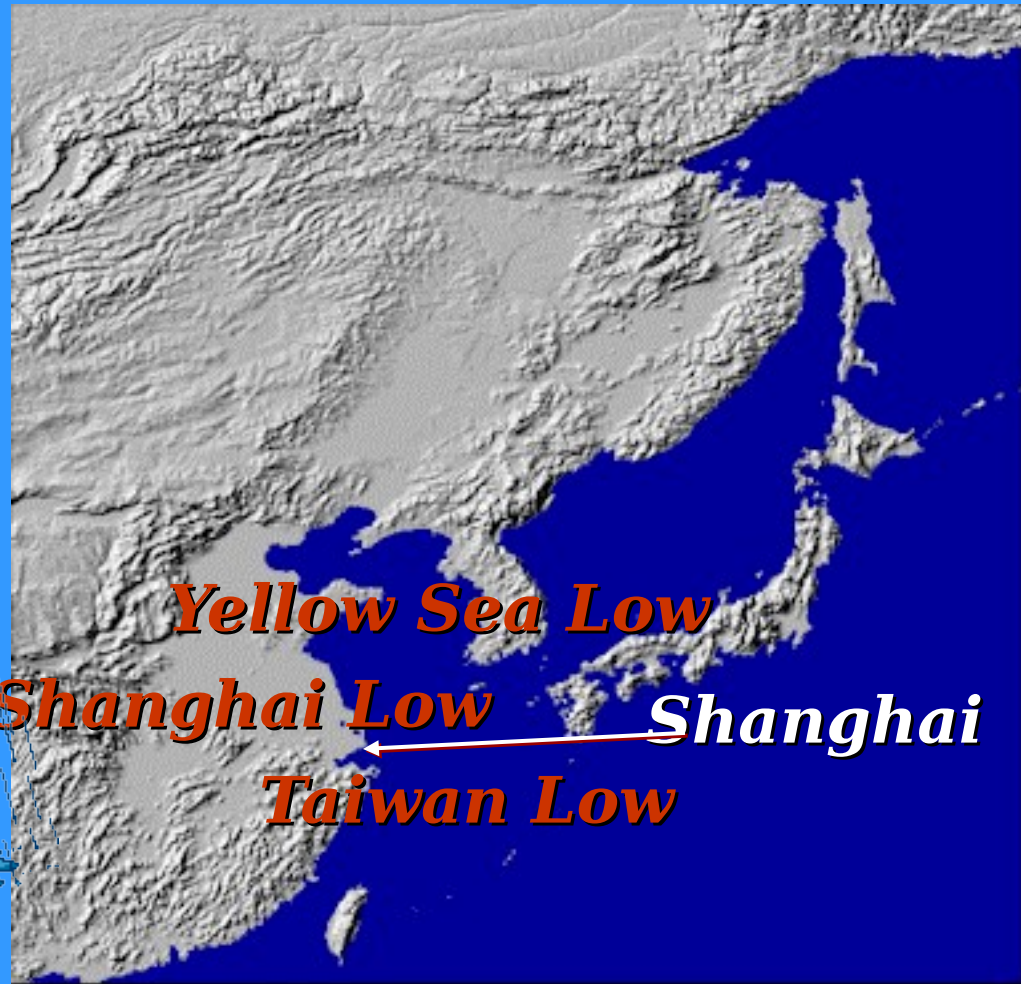
Shanghai

Yellow Sea Low

- Develops during the summer and autumn

- Originates in an area between Shanghai and Osan, then tracks northeast over Korea, Sea of Japan, to the West Pacific at 20 kts

- Can produce a double eye low south of Kyushu or Shikoku 12-18 hours upon entering Yellow Sea

- Produces strong southwest wind over eastern Japan if no double eye develops
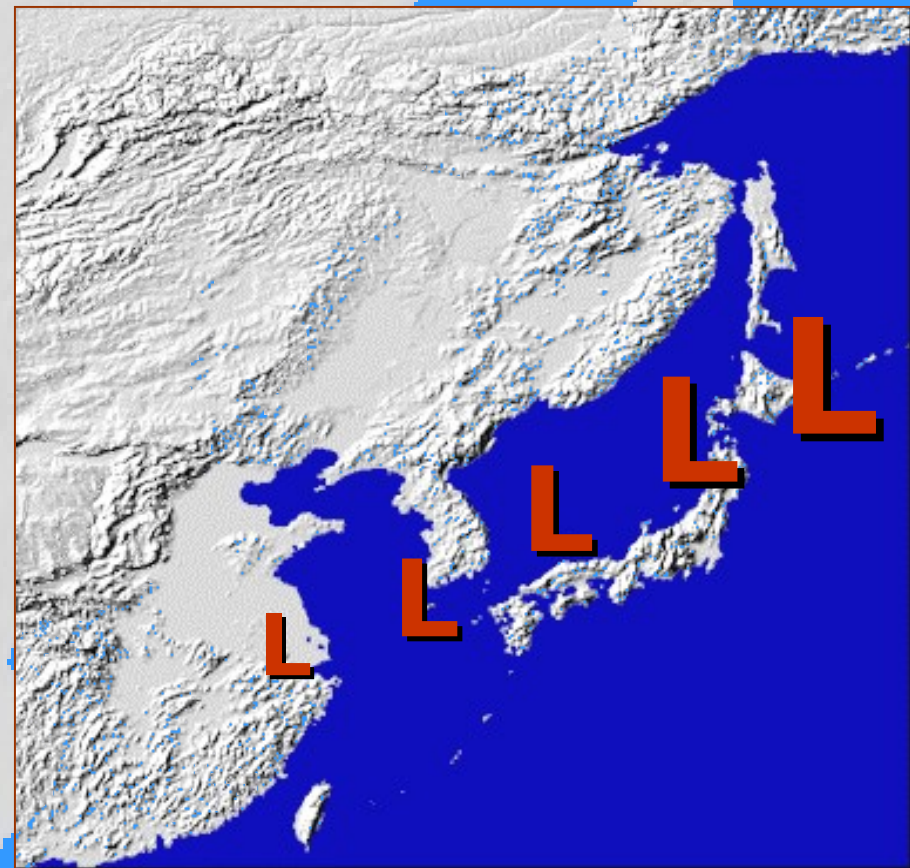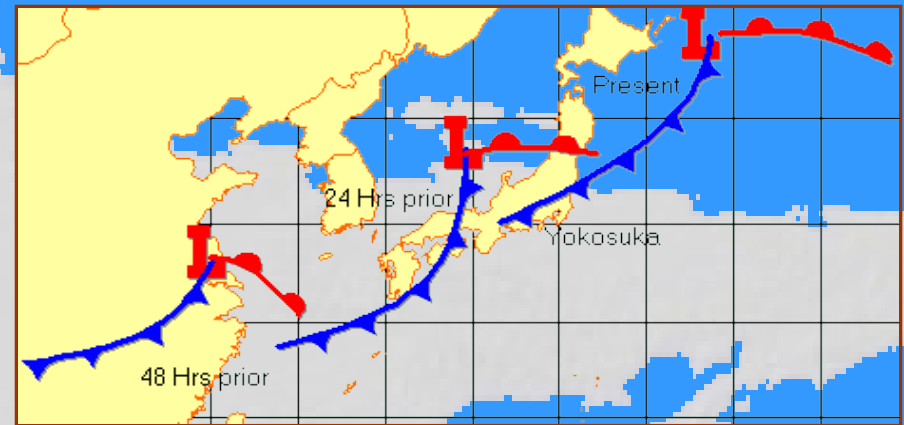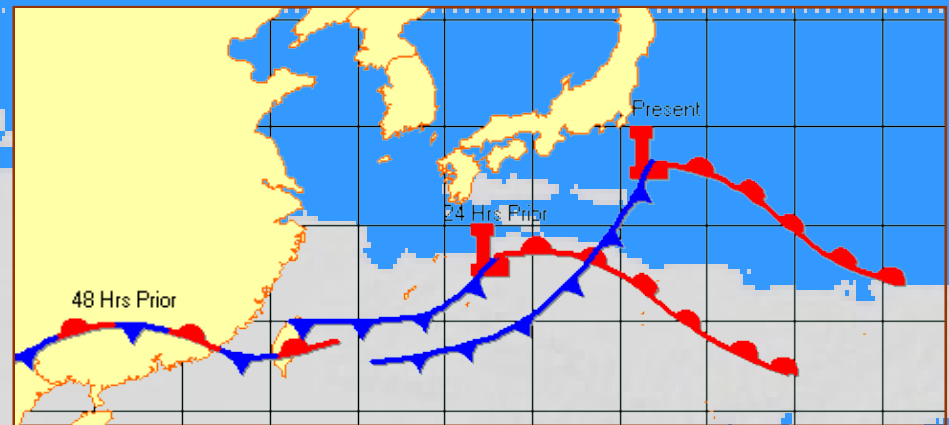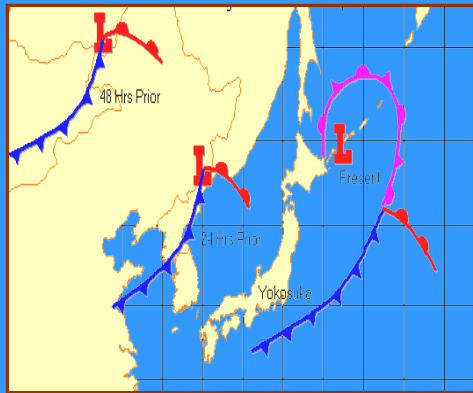
Shanghai Low
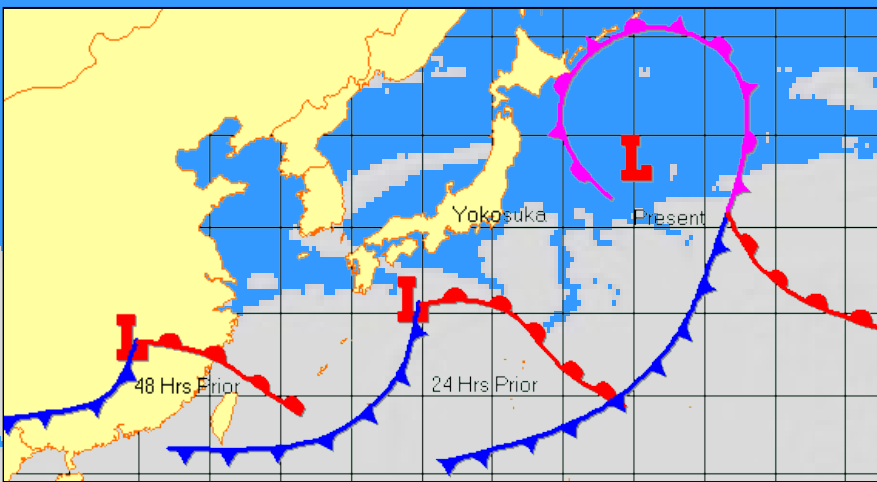
- Occurs most frequently during the **spring**
- Can rapidly intensify when it moves over the Kuroshio current
- Source region is central China, usually along a stationary front
- Tracks east northeast to Japan at 20 kts
- Can track over the Sea of Japan with a secondary low developing lee side of Japan near Shikoku

Taiwan Low

- Generates over China near 25 N 100 E during the autumn through spring

- Usually forms as a wave on a stationary front and moves northeast at 25 kts

- Low will pass south of Japan, depending on long wave (mid-level steering) pattern

- Low usually forms when a high pressure center tracks east over Honshu; low forms on backside along frontal boundary

- If low tracks north to 32 N expect wide spread precipitation

Now, can you identify each low based on its geographic origin?
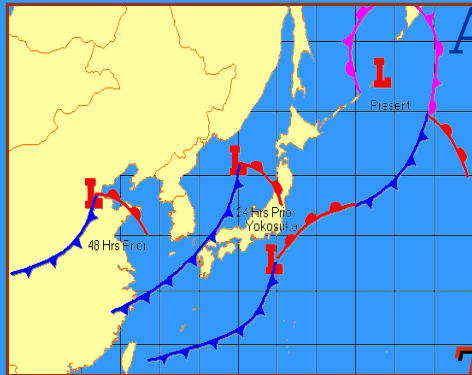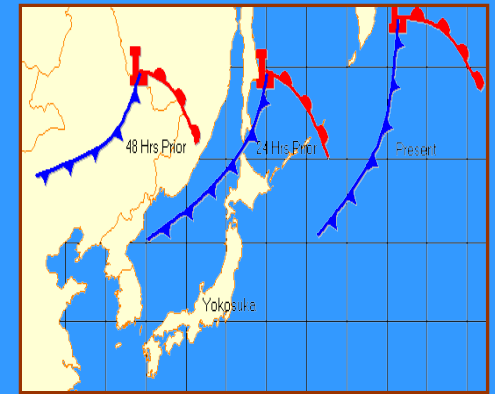
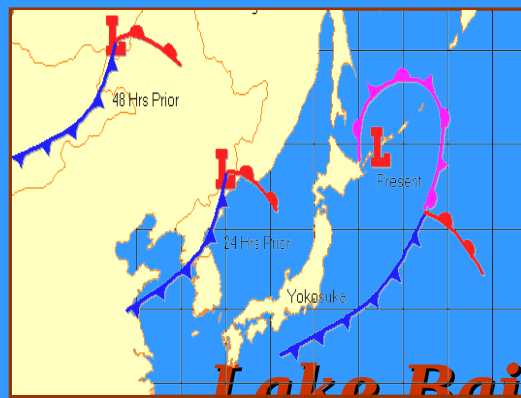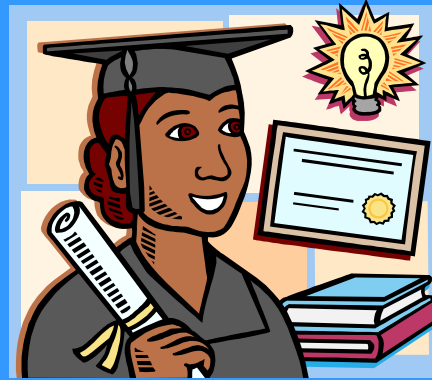Answer is on next slide
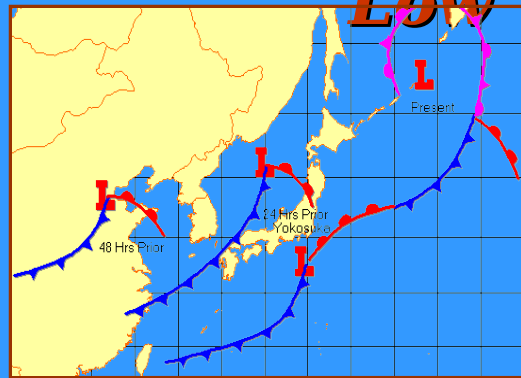
Shanghai Low

Taiwan Low

Manchurian low
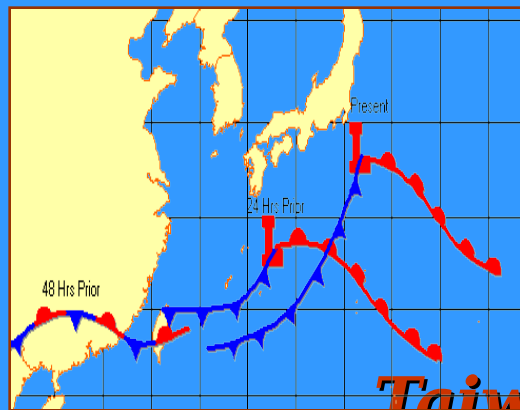
Yellow Sea Low
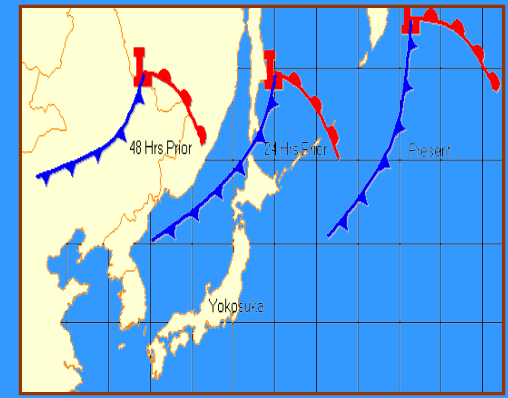
Lake Baikal Low
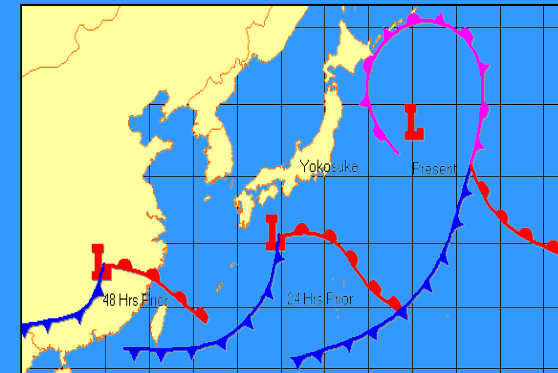
South Mongolia Low
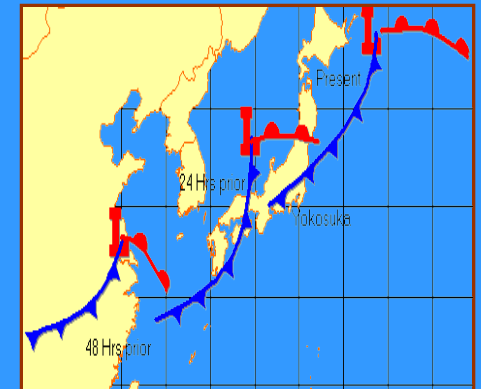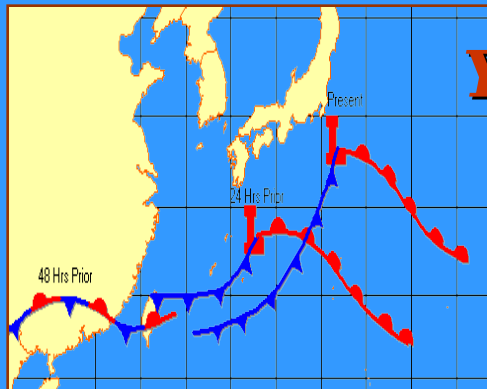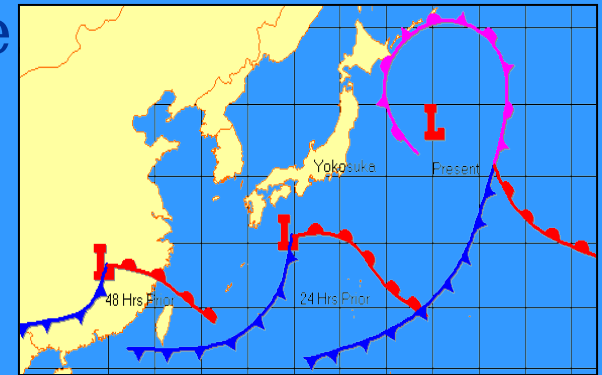
How did you do?

Lake Baikal Low

Manchurian low

Yellow Sea Low

Shanghai Low

Taiwan Low

South Mongolia Low